Report on Ph.D. Dissertation Defence

Ph.D. Candidate	Muhammad Halley Yudhistira
Date	2014/08/01
Time	15:30 – 17:00
Main referee	Yoshitsugu Kanemoto
Referees	Yukihiro Kidokoro
	Nobuhiro Hosoe
	Naohiko Hibino
	Tetsushi Sonobe
	Shota Fujishima (University of Tokyo, CSIS)
Dissertation Title	ON THE EFFECTS OF THE ELECTRONIC ROAD PRICING PLAN IN THE JAKARTA METROPOLITAN AREA

Result: Pass

1. Thesis overview and summary of the presentation.

This thesis examines the effects of introducing electronic road pricing (ERP) in the Jakarta Metropolitan Area (JMA), using a spatial general equilibrium (SGE) model. In addition to conducting welfare evaluation of alternative road pricing schemes, it compares road pricing with a reduction in the gasoline subsidy to increase the gasoline price.

Calibration of the SGE model reflects basic characteristics of the JMA. One of the main differences from preceding studies in developed countries is to include motorcycles in addition to automobiles, which changes the welfare impacts considerably.

Various types of road pricing are examined. First, concerning the size of the tolled areas, three types are considered: the CBD (Central Business District) cordon toll, the SBD (Suburban Business District) cordon toll, and the step-tolling CBD+SBD cordon. The simulation results are: the welfare gain is 225.7 thousand rupiah or approximately 0.48 percent of the gross annual income with the CBD cordon toll, while the gain for wider cases is 60-75 percent higher.

Second, in addition to the case of tolling both cars and motorcycles, the thesis examines the case of tolling cars only. It is shown that charging car users only may

attain a higher welfare gain than tolling both modes. The reason for the result is that car tolling drives more car users to switch to the use of motorcycles, which is faster than the use of public buses, and thus generates higher daily travel time saving than the tolling of both cars and motorcycles. However, for a high enough toll, tolling both of them yields larger welfare gain than tolling only cars.

The thesis also examines the welfare impact of reducing the gasoline subsidy, finding that an increase of 22 percent in the gas price is sufficient for obtaining the welfare gain under the CBD cordon toll.

2. Notes from the Examining meeting (including changes required to the thesis by the referees).

The referees agreed that the draft contains significant contribution to the literature on road pricing to be acceptable as a Ph.D. thesis. They however found that the draft has to be rewritten to improve its writing. First, the academic contributions of the thesis are not clearly written. The author should explain the new insights that have not been discussed in the previous literature. Second, the thesis lacks the analysis of the causes of the effects. Given his extensive sensitivity analyses, he should add discussions on the factors that are critical for the results. Third, grammatical errors have to be corrected.

3. Confirmation by the Main Referee that changes have been done to the satisfaction of the referees.

The author has made sincere efforts to improve the writing of the thesis, and the final version meets the requirement for a Ph.D. thesis.

4. Final recommendation.

Pass